SPECIAL PATHOLOGY

Panacinar emphysema is associated with:
- a. Smoking
- b. Alpha 1 antitrypsin deficiency
- c. Scarring due to inflammation or infection
- d. Trauma
- e. All the above

Which diagnosis is confirmed by an elevated eosinophil number in the blood, Curschmann spirals, and Charcot-Leyden crystals in the sputum?
- a. Bacterial pneumonia
- b. Asthma
- c. Tuberculosis
- d. Sarcoidosis
- e. Viral pneumonia

What causes restrictive pulmonary disease?
- a. Sarcoidosis
- b. Immune disorders
- c. Pneumoconioses
- d. Idiopathic pulmonary fibrosis
- e. All the above

What are "heart failure" cells histologically seen in pulmonary edema?
- a. Hyperplasia of type II pneumocytes
- b. Hemosiderin laden macrophages
- c. Lipofuscin laden macrophages
- d. Hyperplasia of clara cells
- e. All the above

Psammoma bodies are seen in which neoplasm?
- a. Astrocytoma
- b. Meningioma
- c. Glioblastoma multiforme
- d. Cranyopharyngioma
- e. Chordoma

What is the most common pleural tumor?
- a. Squamous cell carcinoma
- b. Adenocarcinoma
- c. Atypical carcinoid
- d. Malignant mesothelioma
- e. Small cell carcinoma

Mark the correct answer with A, and false answer with C.

Common cold is caused by viruses, especially the adenoviruses.

Allergic rhinitis is mediated by an IgE type I immune reaction.
The cause of nasopharyngeal carcinoma is CMV.

Emphysema is dilatation of air spaces without destruction of alveolar walls.

ARDS is characterized by formation of an intra-alveolar hyaline membrane composed of fibrin and cellular debris.

Sarcoidosis can involve almost any organ system and it is characterized by formation of caseating granuloma.

Asbestosis is characterized by ferruginous bodies.

Interstitial pneumonia is caused by various infectious agents, most commonly bacteria.

Pneumocystis jiroveci pneumonia is the most common opportunistic infection in patients with Horner syndrome.

Primary tuberculosis is the initial infection, characterized by formation of Ghon complex.

**Connect hormone with appropriate disorder.**

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<thead>
<tr>
<th>Hormone</th>
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<tr>
<td>Prolactin</td>
<td>A) Cushing Sy</td>
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<td>Somatotropin</td>
<td>B) Graves disease</td>
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<td>ACTH</td>
<td>C) Galactorrhea/amenorrhea</td>
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<td>Aldosterone</td>
<td>D) Conn Sy</td>
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<td>ADH</td>
<td>E) Zollinger-Ellison Sy</td>
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<td>PTH</td>
<td>F) Gigantism/Acromegaly</td>
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<td>Gastrin</td>
<td>G) Diabetes insipidus</td>
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<td>VIP</td>
<td>H) Osteitis fibrosa cystica</td>
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<td>Serotonin</td>
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<td>TSH</td>
<td>J) Carcinoid syndrome</td>
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<td>Hypokalemia and Achlorhydria)</td>
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A 55-year-old man was admitted to the hospital with a chief complaint of increasing shortness of breath over the past several years. The patient was a heavy smoker over the past 40 years. Physical examination reveals cyanosis, elevated jugular venous pressure, and peripheral edema. A high-resolution CT scan shows bullae over both lungs. Chronic intra-alveolar exposure to which of the following proteins is most likely associated with the pathogenesis of chronic obstructive pulmonary disease in this patient?

a. Alkaline phosphatase  
b. α1-Antitrypsin  
c. Collagenase  
d. Elastase  
e. α2-Macroglobulin

2. A 56-year-old man with history of cigarette smoking presents with difficulty swallowing and a muffled voice. Laryngoscopy reveals a 2-cm laryngeal mass. If this mass is a malignant neoplasm, which of the following is the most likely histologic diagnosis?

a. Adenocarcinoma
b. Leiomyosarcoma
c. Small cell carcinoma
d. Squamous cell carcinoma
e. Transitional cell carcinoma

A 27-year-old man with history of alcoholism and repeated bouts of aspiration pneumonia comes to the emergency room with a high fever and pleuritic chest pain. Physical examination reveals dullness on percussion and absence of breath sounds in the right lower lung field. A chest x-ray demonstrates pleural fluid on the right side. Thoracentesis returns a thick, foul-smelling fluid. Which of the following is the most likely diagnosis?

a. Chylothorax
b. Empyema
c. Hemothorax
d. Hydrothorax
e. Pneumothorax

A 48-year-old woman with a longstanding history of ulcerative colitis presents with anemia and shortness of breath. Laboratory studies show increased serum levels of carcinoembryonic antigen (CEA). A chest x-ray reveals multiple, bilateral, round masses in both lungs. Histologic examination of an open-lung biopsy discloses nodules that are composed of glandlike structures. What is the most likely diagnosis?

a. Adenocarcinoma
b. Bronchioloalveolar carcinoma
c. Eosinophilic granuloma
d. Large cell undifferentiated carcinoma
e. Metastatic carcinoma

A 63-year-old man with small-cell carcinoma of the left mainstem bronchus begins chemotherapy. During the treatment period, he becomes febrile and develops a productive cough. The temperature is 38.7°C (103°F), respirations are 32/min, and blood pressure is 125/85 mm Hg. A CBC shows leukocytosis (WBC = 18,500/μL). The patient’s cough worsens, and he begins expectorating large amounts of foul-smelling sputum. A chest x-ray shows a distinct cavity with an air/fluid level distal to the tumor area. Which of the following is the most likely diagnosis?

a. Atelectasis
b. Bronchiectasis
c. Ghon complex
d. Lobar pneumonia
e. Pulmonary abscess

A 28-year-old woman with cystic fibrosis presents with increasing shortness of breath and production of abundant foul-smelling sputum. The sputum in this patient is most likely associated with which of the following pulmonary conditions?

a. Atelectasis
b. Bronchiectasis
c. Empyema
d. Pneumothorax
e. Pyothorax
A 53-year-old man develops weakness, malaise, cough with bloody sputum, and night sweats. A chest x-ray reveals numerous apical densities bilaterally, some of which are cavitary. Exposure to *Mycobacterium tuberculosis* was documented 20 years ago, and *M. tuberculosis* is identified in his sputum. Which of the following describes the expected lung pathology in this patient?

a. Dense fibrosis  
b. Eosinophilic infiltration  
c. Granulomas  
d. Interstitial pneumonia  
e. Plasma cell infiltration

A 22-year-old man with AIDS complains of persistent cough, night sweats, low-grade fever, and general malaise. A chest x-ray reveals an area of consolidation in the periphery of the left upper lobe, as well as hilar lymphadenopathy. Sputum cultures show acid-fast bacilli. Which of the following is the most likely diagnosis?

a. Bronchopneumonia  
b. Pulmonary abscess  
c. Sarcoidosis  
d. Tuberculosis  
e. Wegener granulomatosis

A 60-year-old alcoholic woman presents to the emergency room with fever, chills, and shortness of breath. The sputum is rusty-yellow and contains numerous neutrophils, red blood cells, and gran-positive cocci. A chest x-ray shows diffuse haziness over both lungs. One week following admission, the patient develops empyema. This pulmonary condition is associated with the spread of bacterial infection to which of the following anatomic locations?

a. Blood  
b. Bronchi  
c. Interstitial space  
d. Pericardium  
e. Pleural space

A 40-year-old woman with leukemia is treated with chemotherapy. During treatment she develops increasing cough and shortness of breath. A chest x-ray shows diffuse lung infiltrates. Sputum cultures are negative, and the patient does not respond to routine antibiotic therapy. An open lung biopsy is diagnosed by the pathologist as viral pneumonia. Which of the following histopathologic findings would be expected in the lungs of this patient?

a. Clusters of epithelioid macrophages  
b. Confluent areas of caseous necrosis  
c. Fibrous scarring of lung parenchyma  
d. Hyaline membranes and interstitial inflammation  
e. Sheets of bacilli-filled macrophages

A 35-year-old man complains of difficulty swallowing and a tendency to regurgitate his food. Endoscopy does not reveal any esophageal or gastric abnormalities. Manometric studies of the
esophagus show a complete absence of peristalsis, failure of the lower esophageal sphincter to relax upon swallowing, and increased intra-esophageal pressure. Which of the following is the most likely diagnosis?

a. Achalasia  
b. Barrett esophagus  
c. Esophageal stricture  
d. Mallory-Weiss syndrome  
e. Schatzki ring

A 45-year-old man presents with longstanding heartburn and dyspepsia. An x-ray film of the chest shows a retrocardiac, gas-filled structure. This patient most likely has which of the following conditions?

a. Boerhaave syndrome  
b. Esophageal varices  
c. Esophageal webs  
d. Hiatal hernia  
e. Mallory-Weiss syndrome

A 3-week-old boy is brought to the physician by his parents, who report that he vomits forcefully immediately after nursing. Physical examination reveals an “olive-like”, palpable mass and visible peristaltic movements within the infant’s abdomen. What is the most likely cause of projectile vomiting in this infant?

a. Appendicitis  
b. Congenital pyloric stenosis  
c. Hirschprung disease  
d. Meconium ileus  
e. Tracheoesophageal fistula

A 34-year-old man presents with a 5-month history of weakness and fatigue. There is no history of drug or alcohol abuse. A CBC shows megaloblastic anemia and a normal reticulocyte count. Further laboratory studies reveal vitamin B12 deficiency. Anemia in this patient is most likely caused by which of the following?

a. Acute erosive gastritis  
b. Autoimmune gastritis  
c. *Helicobacter pylori* gastritis  
d. Menetrier disease  
e. Peptic ulcer disease

A 58-year-old woman presents with a 2-month history of abdominal discomfort and dark stools. Physical examination shows pallor but no evidence of jaundice. Laboratory studies disclose a microcytic, hypochromic anemia, with a hemoglobin level of 6.7 g/dL. A barium swallow radiograph reveals a “leather bottle” appearance of the stomach. Microscopic examination shows diffusely infiltrating malignant cells, many of which are “signet ring” cells, in the stomach wall. Which of the following is the most likely diagnosis?

a. Fungating adenocarcinoma  
b. Gastric leiomyosarcoma  
c. Gastric lymphoma
A 60-year-old woman complains of increasing abdominal girth of 4 weeks in duration. Physical examination discloses ascites, and cytologic examination of the fluid reveals malignant glandular cells. Exploratory laparotomy shows multiple tumor nodules on the serosal surface of the small intestine. Which of the following is the most likely diagnosis?

a. Adenocarcinoma of the colon  
b. Carcinoid tumor  
c. Gastrointestinal stromal tumor  
d. MALToma  
e. Metastatic carcinoma

A 24-year-old man is brought to the emergency room with symptoms of acute intestinal obstruction. His temperature is 38°C (101°F), respirations are 25/min, and blood pressure is 120/80 mm Hg. Physical examination reveals a mass in the right lower abdominal quadrant. At laparoscopy, there are numerous small bowel strictures and a fistula extending into a loop of small bowel. Which of the following is the most likely diagnosis?

a. Adenocarcinoma  
b. Carcinoid tumor  
c. Crohn disease  
d. Pseudomembranous colitis  
e. Ulcerative colitis

A 2-year-old girl with a history of chronic constipation since birth is brought to emergency room because of nausea and vomiting. Physical examination shows marked abdominal distension. Abdominal radiography reveals distended bowel loops with a paucity of air in the rectum. A rectal biopsy shows an absence of ganglion cells. Which of the following is the most likely diagnosis?

a. Acquired megacolon  
b. Anorectal stenosis  
c. Hirschsprung disease  
d. Imperforate anus  
e. Rectal atresia

A 4-year-old girl is brought to the physician because her parents noticed she has been having pale, fatty, foul-smelling stools. The patient is at the 50th percentile for height and 10th percentile for weight. Her symptoms respond dramatically to a gluten-free diet. Which of the following is the most likely diagnosis?

a. Celiac sprue  
b. Cystic fibrosis of the pancreas  
c. Menetrier disease  
d. Tropical sprue  
e. Whipple disease

A 34-year-old man with AIDS presents with a 3-month history of constipation and lower abdominal pain. The patient has a history of chronic diarrhea and persistent cough. Recently, he notices blood in his stool. Laboratory studies reveal mild iron-deficiency anemia. Stool
specimens are positive for occult blood. A CBC shows a CD4 count of <50/μL. Sigmoidoscopy discloses a mass in the rectosigmoid region. In addition to B-cell lymphoma, this patient is at increased risk of developing which of the following tumors of the gastrointestinal tract?

a. Carcinoid tumor
b. Colonic adenocarcinoma
c. Kaposi sarcoma
d. Leiomyosarcoma
e. Melanoma

A 36-year-old woman is evaluated for an abnormal Pap smear. A cervical biopsy shows atypical squamous cells throughout the entire thickness of the epithelium, with no evidence of epithelial maturation. The basal membrane appears intact. What is the appropriate diagnosis?

a. Clear cell adenocarcinoma
b. Invasive squamous cell carcinoma
c. Mild dysplasia (cervical intraepithelial neoplasia-CIN-1)
d. Severe dysplasia (CIN-3)
e. Squamous metaplasia of the transformation zone

A 52-year-old woman presents with chronic pelvic discomfort. A CT scan of the pelvis shows a 10-cm, well-circumscribed uterine mass. A hysterectomy is performed. On gross examination, the mass is soft with areas of necrosis and irregular borders extending into the myometrium. Histologic examination demonstrates large zones of necrosis surrounded by a rim of disorganized spindle cells that display numerous mitoses. Immunohistochemical staining for smooth muscle actin is positive. Which of the following is the most likely diagnosis?

a. Adenomyosis
b. Carcinosarcoma
c. Endometrial stromal sarcoma
d. Leiomyoma
e. Leiomyosarcoma

A 40-year-old woman presents with a 5-year history of dysmenorrhea. Physical examination and endocrine studies are normal. A hysterectomy is performed. Histologic examination of the uterine wall reveals areas of extensive adenomyosis. Which of the following best describes this patient’s uterine pathology?

a. Benign neoplasm of glandular epithelial cells
b. Displacement of endometrial glands and stroma
c. Endometrial intraepithelial neoplasia
d. Hyperplasia of trophoblast as a sequel of incomplete abortion
e. Premalignant uterine lesion composed of smooth muscle

A 60-year-old woman presents with a 2-week history of uterine bleeding. Gynecologic examination reveals an enlarged uterus. The hysterectomy specimen shows a large polypoid mass involving the endometrium and myometrium. Histologic examination reveals malignant glands and malignant stromal elements, including striated muscle and cartilage. What is the appropriate diagnosis?
A 30-year-old woman presents with a 5-month history of increasing abdominal girth and pelvic discomfort. Imaging studies reveal a mass replacing the left ovary. A multilocular tumor filled with thick, viscous fluid is removed. Tumor spaces are lined by mucinous, columnar epithelial cells, showing no evidence of atypia. There are no papillary structures and no evidence of stromal invasion. Which of the following is appropriate pathologic diagnosis?

- a. Endometrioid adenoma of the ovary
- b. Granulosa cell tumor
- c. Mucinous cystadenocarcinoma
- d. Mucinous cystadenoma
- e. Serous cystadenocarcinoma

A 22-year-old woman presents to the emergency room with a 2-hour history of acute abdominal pain and vaginal bleeding. Her vital signs are normal. Physical examination reveals blood oozing from the vaginal opening. Laparotomy shows an enlarged right fallopian tube with hemorrhage and rupture. What is most likely cause of hemorrhage in this patient?

- a. Choriocarcinoma
- b. Ectopic pregnancy
- c. Infarcted tubal polyp
- d. Intramural leiomyoma
- e. Tubal adenocarcinoma

A 34-year-old woman in the third trimester of her second pregnancy presents with a 1-week history of vaginal bleeding. The patient subsequently gives birth to a healthy female at 35 weeks of gestation. Immediately after delivery, the patient begins to hemorrhage transvaginally. The bleeding cannot be controlled, and the patient undergoes emergency hysterectomy. Examination of the hysterectomy specimen reveals penetration of chorionic villi deep into the myometrium, causing failure of the placental tissue to fully separate from the uterine wall. Which of the following best describes the uteroplacental abnormality seen in this patient?

- a. Gestational choriocarcinoma
- b. Abruptio placentae
- c. Placenta increta
- d. Placenta previa
- e. Preeclampsia

A 35-year-old woman complains of vaginal discomfort for 2 weeks. Physical examination reveals a scanty vaginal discharge. The fluid develops a “fishy” odor after treatment with potassium hydroxide. A Pap smear taken during the pelvic examination shows squamous cells covered with coccobacilli (“clue” cells). Which of the following is the most likely etiology of vaginal discomfort in this patient?

- a. Chlamydia trachomatis
b. Gardnerella vaginalis  
c. Herpes simplex virus  
d. Human papillomavirus  
e. Trichomonas vaginalis

A 56-year-old woman presents with a 3-month history of vaginal bleeding. A cervical Pap smear reveals malignant, glandular epithelial cells. This patient most likely has a neoplasm originating in which of the following anatomic locations?

a. Cervix  
b. Endometrium  
c. Ovary  
d. Vagina  
e. Vulva

A 43-year-old woman presents with a 6-month history of increasing abdominal girth. On physical examination, there is pronounced ascites. Pelvic examination reveals a left adnexal mass. A 6-cm ovarian tumor is removed. The tumor is solid and white. Histologically, it is composed of cells resembling normal ovarian stroma surrounded by collagen fibers. Which of the following is appropriate diagnosis?

a. Fibroma  
b. Granulosa cell tumor.  
c. Leiomyosarcoma  
d. Papillary cystadenoma  
e. Sertoli-Leydig cell tumor

A 64-year-old man presents with a 4-day history of dysuria and hematuria. He has a history of repeated bouts of acute cystitis. Urine cultures are positive for E. coli. Ultrasound examination reveals an echogenic object in a bladder diverticulum. Which of the following conditions most likely contributed to the formation of a bladder diverticulum in this patient?

a. Diabetes mellitus  
b. Malakoplakia  
c. Nephrolithiasis  
d. Nodular prostatic hyperplasia  
e. Transitional cell carcinoma

A 65-year-old man presents with a recent episode of painless hematuria. Vital signs are normal. All blood tests and urinalysis are normal, except for the presence of blood in the urine. The patient smokes cigarettes but does not drink alcoholic beverages. Which of the following is the most likely cause of hematuria in this patient?

a. Acute cystitis  
b. Acute pyelonephritis  
c. Bladder calculi  
d. Carcinoma of the bladder  
e. Prostatic carcinoma

A 67-year-old man complains of increased urgency to void. He could not completely empty his bladder and felt “distended” and “irritated” all the time. Rectal digital examination reveals
an enlarged prostate. A biopsy discloses hyperplastic prostatic glands embedded in enlarged stroma. If this patient’s condition persists, which of the following is a possible complication?

a. Adenocarcinoma of bladder  
b. Hydroureter  
c. Malakoplasia  
d. Squamous cell carcinoma of bladder  
e. Transitional cell carcinoma of bladder

A 9-month-old boy is brought to the physician by his mother, who noticed that her son had developed scrotal swelling. Physical examination reveals a scrotal mass. The lesion can be transilluminated and is composed of clear serous fluid. What is the appropriate diagnosis?

a. Epididymitis  
b. Hematocele  
c. Hydrocele  
d. Spermatocele  
e. Varicocele

An 8-year-old boy is brought to the physician because his parents noticed a mass on his left testicle. Physical examination reveals a solid mass that cannot be transilluminated, and a biopsy shows a haphazard arrangement of benign differentiated tissues, including squamous epithelium, glandular epithelium, cartilage, and neural tissue. The left testicle was removed surgically, and the patient is symptom free 5 years later. Which of the following is the most likely diagnosis?

Embryonal carcinoma  
Mature teratoma  
Mixed germ cell tumor  
Seminoma  
Teratocarcinoma

A 3-month-old boy is brought to the physician because his parents cannot find one of his testicles. Physical examination confirms the parents’ observation. Which of the following is the most likely diagnosis?

Anorchia  
Cryptorchidism  
Klinefelter syndrome  
Macroorchidism  
Male pseudohermaphroditism

A 16-year-old boy from Africa presents with a 5-day history of fever and testicular pain. Physical examination shows swollen, tender parotid glands and testes. Which of the following is the most likely responsible pathogen?

*Haemophilus ducreyi*  
Human immunodeficiency virus  
Human papillomavirus  
Mumps virus  
*Streptococcus pyogenes*
A 68-year-old man is found to have an elevated serum PSA level (>6 ng/mL). Biopsy of the prostate reveals a poorly differentiated adenocarcinoma. Which of the following best describes the putative precursor of this neoplasm?

a. Basal cell hyperplasia  
b. Chronic epididymitis  
c. Chronic prostatitis  
d. Nodular hyperplasia of the prostate  
e. Prostatic intraepithelial neoplasia

A 55-year-old man presents with urinary symptoms of urgency and frequency. Rectal examination reveals an enlarged prostate. Laboratory studies show an elevated PSA of 4.9 ng/mL (normal = 0 – 4). The patient subsequently undergoes a prostate needle biopsy series, which demonstrated two cancer-positive needle cores: Gleason grades 2+2 (4) and 3+2 (5). Which of the following is the appropriate diagnosis?

a. Adenocarcinoma  
b. Nodular prostatic hyperplasia  
c. Prostatic intraepithelial neoplasia  
d. Squamous cell carcinoma  
e. Transitional cell carcinoma

An 18-year-old man presents with a 3-week history of scrotal swelling. The affected area can be transilluminated and is found to contain a clear, milky fluid. Microscopic examination of the aspirated fluid reveals degenerating spermatozoa. What is the appropriate diagnosis?

a. Hematocele  
b. Hydrocele  
c. Scrotal edema  
d. Spermatocele  
e. Varicocele

The manifestations of syphilitic cardiovascular disease include all of the following EXCEPT:

a. aneurysm of the ascending aorta  
b. aortitis  
c. aortic valvular insufficiency  
d. cystic medial necrosis of aorta  
e. narrowing of coronary ostia

Complications of aortic aneurysms include all of the following EXCEPT:

a. erosion of bones  
b. pulmonary embolism  
c. rupture with cardiac tamponade  
d. rupture with exsanguination  
e. thrombosis in sac

The commonest primary neoplasm of the heart is the

a. lipoma
b. myxoma
c. papillary fibroelastoma
d. rhabdomyoma
e. rhabdomyosarcoma

The commonest site of metastatic neoplasm in the heart is the

a. endocardium
b. myocardium
c. pericardium
d. right atrium
e. valve cusps

The commonest cause of iron deficiency anemia in the United States is

a. chronic blood loss
b. chronic renal failure
c. inadequate iron intake in diet
d. iron loss due to hemolysis
e. mucosal block to iron absorption in duodenum

A 60 year-old man complained of bone pain, especially in his spine. X-rays revealed lytic lesions in the vertebrae and skull. He also had anemia and hypercalcemia. The likeliest diagnosis is

a. Burkitt’s lymphoma
b. chronic lymphocytic lymphoma
c. heavy chain disease
d. multiple myeloma
e. Waldenström’s macroglobulinemia

An association with an increased incidence of lymphomas has been found with all of the following \textbf{EXCEPT}: a. autoimmune disorders b. chromosome abnormalities c. cigarette smoking d. immune deficiencies e. viruses

A young boy had excessive bleeding from minor wounds and even spontaneously. He was found to have severe deficiency of coagulation factor VIII. Factor IX leves war normal, as was platelet adhesiveness. The likeliest diagnosis is

a. Christmas disease
b. hemophilia
c. Stuart factor deficiency
d. von Willebrand’s disease

Cells which play a primary role in immune reactions include all of the following \textbf{EXCEPT}: a. eosinophils
b. lymphocytes
c. macrophages
d. mast cells
e. neutrophils

A 30 year-old woman complained of joint pains and swelling. She had an erythematous rash across the nose and cheeks, proteinuria, and pancytopenia. The likeliest diagnosis is

a. dermatomyositis
b. disseminated lupus erythematosus (DLE)
c. polyarteritis nodosa
d. rheumatoid arthritis
e. systemic sclerosis

A striking increase in the incidence of malignant neoplasms occurs in patients with

a. atopic disorders
b. disseminated lupus erythematosus
c. immune deficiency disorders
d. scleroderma
e. tuberculosis

Immune complex deposition in a “lumpy, bumpy” pattern along glomerular basement membranes is found in all of the following EXCEPT:

a. acute proliferative glomerulonephritis
b. dense deposit glomerulonephritis
c. lupus nephritis
d. membranous glomerulonephropathy
e. minimal change disease

A 10 year-old boy developed a pharyngitis due to β-hemolytic streptococci. It subsided after a few days of penicillin therapy. Two weeks later his eyelids became puffy, and he had fever, elevated blood pressure, and gross hematuria. The likeliest diagnosis is

a. acute proliferative glomerulonephritis
b. antglomerular basement membrane disease
c. membranous glomerulonephropathy
d. minimal change disease
e. rapidly progressive glomerulonephritis

A 35 year-old man developed hematuria, proteinuria, mounting azotemia, and hypertension. A renal biopsy confirmed the diagnosis of rapidly progressive glomerulonephritis. The most characteristic microscopic finding in this condition is

a. epithelial crescents within glomeruli
b. hyalinization of numerous glomeruli
c. hyalinization of walls of afferent arterioles
d. proliferation of glomerular tuft and mesangial cells
e. uniform thickening of glomerular basement membranes
A 25 year-old man developed hematuria and hemoptysis. Immunofluorescent studies on a renal biopsy demonstrated linear immune globulin deposits along glomerular basement membranes. The most likely diagnosis is

a. acute proliferative glomerulonephritis  
b. diabetic glomerulosclerosis  
c. Goodpasture’s syndrome  
d. lupus nephritis  
e. membranous glomerulonephropathy

Peptic ulcer may occur in all of the following EXCEPT:

a. lower esophagus  
b. stomach  
c. jejunum  
d. ileum adjacent to Meckel’s diverticulum  
e. cecum

Major complications of duodenal peptic ulcer include all of the following EXCEPT:

a. hemorrhage  
b. malignant transformation  
c. obstruction  
d. perforation

The major cause of sprue in the U.S. is

a. bacterial infection  
b. deficiency of vitamin B\textsubscript{12}  
c. hypersensitivity to gliadin fraction of white gluten  
d. lymphatic obstruction  
e. pancreatic insufficiency

A 20 year-old man complained of intermittent diarrhea and lower abdominal pain. An upper G-I series showed segmental narrowing in the ileum. The likeliest diagnosis is

a. adenocarcinoma  
b. carcinoid  
c. intestinal lipodystrophy (Whipple’s disease)  
d. regional enteritis (Crohn’s disease)  
e. tuberculosis

A 30 year-old woman had episodes of flushing of the face, nausea, and diarrhea. At surgery a yellow tumor was found in the wall of the ileum. The most likely diagnosis of the tumor is

a. adenoma  
b. adenocarcinoma  
c. carcinoid  
d. leiomyoma  
e. mucoepidermoid carcinoma
Factors associated with an increased incidence of carcinoma of the colon include all of the following EXCEPT:

a. familial colonic polyposis  
b. cholecystectomy  
c. low fiber, high fat diet  
d. Peutz – Jeghers syndrome  
e. ulcerative colitis

A 45 year-old alcoholic went on a binge for 2 weeks. He was found comatose and in liver failure. His liver at autopsy showed hyaline Mallory bodies in the cytoplasm of the hepatocytes. This finding is most typical of

a. alcoholic hepatitis  
b. biliary cirrhosis  
c. hepatocarcinoma  
d. macronodular (postnecrotic) cirrhosis  
e. viral hepatitis

The most common malignant neoplasm of the liver in the U.S. is

a. carcinoid  
b. cholangiocarcinoma  
c. hepatocarcinoma  
d. Kaposi’s sarcoma  
e. metastatic carcinoma

The complications of gallstones include all of the following EXCEPT:

a. adenocarcinoma of ampulla of Vater  
b. acute intrahepatic cholangitis  
c. acute pancreatitis  
d. gangrenous cholecystitis  
e. intestinal obstruction

All of the following are features of pancreatic carcinoma EXCEPT:

a. carcinoembryonic antigen test is often positive  
b. most cases develop in the head of the pancreas  
c. obstructive jaundice may be a presenting sign  
d. phlebothrombosis tends to occur  
e. there is a significant association with cystic fibrosis of the pancreas

Bronchopneumonia is usually secondary to all of the following EXCEPT:

a. aspiration into lungs  
b. congestion and edema of lungs  
c. influenzal pneumonia  
d. lipid pneumonia  
e. sarcoidosis of lungs
A 40 year-old man developed fever and a cough with copious foul smelling sputum. A chest film showed a 5 cm density with a fluid level in the right lower lobe. A lung abscess was diagnosed. Lung abscess may be secondary to all of the following EXCEPT:

a. aspiration of oropharyngeal contents  
b. bronchial obstruction due to foreign body  
c. bronchiectasis  
d. organized pneumonia  
e. septic pulmonary embolism

Complications of chronic lung abscess include all of the following EXCEPT:

a. brain abscess  
b. bronchopleural fistula  
c. empyema  
d. honeycomb lung  
e. secondary amyloidosis

A 50 year-old man who had smoked over a pack of cigarettes daily for many years had a hacking cough productive of mucoid sputum for 2 years. He had scattered rhonchi and wheezing. The likeliest diagnosis is

a. asthma  
b. bronchiectasis  
c. chronic bronchitis  
d. chronic pneumonitis  
e. diffuse pulmonary fibrosis

All of the following are characteristic of asthma EXCEPT:

a. bronchial mucous glands are hyperplastic  
b. bronchial walls are infiltrated by eosinophils  
c. bronchial walls show smooth muscle hypertrophy  
d. foci of squamous metaplasia develop on bronchial mucosa  
e. the Reid index is increased

Progressive massive fibrosis of the lungs occurs in

a. coal worker’s pneumoconiosis  
b. healed tuberculosis  
c. organized pneumonia  
d. radiation pneumonitis  
e. sarcoidosis

Of the following, the lung disorder which is most characteristically associated with the development of pulmonary tuberculosis is

a. anthracosis  
b. bronchiectasis  
c. centrilobular emphysema  
d. lipid pneumonia  
e. silicosis
Common sites of metastases from primary lung cancer include all of the following **EXCEPT**:

- a. adrenal glands
- b. bones
- c. brain
- d. liver
- e. spleen

A 60 year-old man developed pain down the right arm and ipsilateral Horner’s syndrome. The likeliest cause is

- a. apical lung abscess
- b. metastatic carcinoma in lower cervical lymph nodes
- c. pulmonary scar carcinoma in apex
- d. reinfection apical tuberculosis
- e. superior pulmonary sulcus carcinoma (Pancoast tumor)

Atelectasis may be due to all of the following **EXCEPT**:

- a. bronchiectasis
- b. inhaled foreign body in bronchus
- c. mucus plugs in bronchi
- d. pleural effusion
- e. spontaneous pneumothorax

A 30-year old women complains of recent easy fatigability, bruising, and recurrent throat infection. Physical examination reveals numerous petechiae over her body and mouth. Abnormal laboratory findings include hemoglobin of 6 g/dL, WBC of 1500/µL, and platelets of 20,000/µL. The bone marrow is hypocellular and displays increased fat. What is the appropriate diagnosis?

- (A) Aplastic anemia
- (B) Iron-deficiency
- (C) Megaloblastic anemia
- (D) Myelofibrosis with myeloid metaplasia
- (E) Pure red cell aplasia

A 60-year old man present with headaches and pruritus, Physical examination reveals splenomegaly but no lymphadenopathy. A CBC demonstrates elevated hemoglobin of 19.5 g/dL, WBC of 12,800/µL, and platelets of 550,000/µL. The bone marrow displays hypercellularity of all lineages and depletion of marrow iron stores. Which of the following is the most likely diagnosis?

- (A) Acute myeloid leukemia
- (B) Essential thrombocytemia
- (C) Idiopathic myelofibrosis
- (D) Occult infection
- (E) Polycytemia vera
A 55-year-old man complains of pain in his back, fatigue and occasional confusion. He admits to polyuria and polydipsia. X-ray examination reveals numerous lytic lesions in the lumbal vertebral bodies. Laboratory studies disclose hypoalbuminaemia, mild anemia, and thrombocytopenia. A monoclonal Igk peak is demonstrated by serum electrophoresis. Urinalysis shows 4+ proteinuria. A bone marrow biopsy discloses foci of plasma cells, which account for 18% of all hematopoetic cells. Which is the appropriate diagnosis?

(A) Acute lymphoblastic lymphoma
(B) Chronic lymphoblastic lymphoma
(C) Extramedulmonary plasmocytoma
(D) Multiple myeloma
(E) Waldenstöm macroglobulinemia

A 24-year old woman presents with an earache of 4 days in duration. She also reports increased urine production, skin rash and bone pain on her scalp. Physical examination reveals otitis media, dermatitis and exophtalmus. An X-ray of the scalp shows calvarial bone defects. A fine-needle aspirate displays numerous eosinophils. Which is the most likely diagnosis?

(A) Hodgkin lymphoma
(B) Langerhans cell histiocytosis
(C) Malignant melanoma
(D) Metastatic breast carcinoma
(E) Multiple myeloma

A 67-year old woman with a prosthetic aortic valve develops progressive anemia. Examination of peripheral blood smear reveals retoculocytosis and schistiocytes. What is the appropriate diagnosis?

(A) Acanthosis
(B) Henoch-Schönlein purpura
(C) Idiopathic thrombocytopenic purpura
(D) Macronagiopathic hemolytic anemia
(E) Microangiopathic hemolytic anemia

A 4-year old boy develops severe bleeding into the knee joint. Laboratory studies show that serum levels of factor IX are reduced but levels of factor VII is normal. What is the appropriate diagnosis?

(A) Hemophilia A
(B) Hemophilia B
(C) Henoch-Schönlein purpura
(D) Idiopathic thrombocytopenic purpura
(E) von Willebrand disease

A 20-year old carpenter with a wound infection on his left thumb presents with an enlarged and tender lymph node in the axilla. Lymph node biopsy shows follicular enlargement and
hyperemia. The sinuses are filled with neutrophils. Which of the following is the most likely diagnosis?

(A) Castelman disease  
(B) Histiocytosis X  
(C) Interfollicular hyperplasia  
(D) Sinus histiocytosis  
(E) Suppurative lymphadenitis

A 56-year-old man with 3-year history of B-cell chronic lymphocytic leukemia complains of the recent onset of fever, weight loss, abdominal pain, and enlargement of lymph nodes. Physical examination reveals hepatosplenomegaly and generalized lymphadenopathy. A lymph node biopsy shows a high-grade, large-cell lymphoma. This patient has which of the following diseases?

(A) Carcinoid tumor  
(B) Hodgkin lymphoma  
(C) Lymphocytic lymphoma  
(D) Squamous cell carcinoma  
(E) Thymoma

A 60-year-old woman complains of weakness and hematuria. Physical examination shows marked pallor, hepatosplenomegaly, and numerous ecchymoses of the upper and lower extremities. A CBC reveals a normocytic normochromic anemia, thrombocytopenia, neutropenia, and a marked leukocytosis, which is composed mainly of myeloblasts. The major clinical problems associated with this patient’s condition are most directly related to which of the following?

(A) Avascular necrosis of bone  
(B) Disseminated intravascular coagulation  
(C) Hypersplenism  
(D) Microangiopathic hemolytic anemia  
(E) Suppression of hematopoiesis

A 60-year-old woman with small cell carcinoma of the lung notes rounding of her face, upper truncal obesity, and muscle weakness. Physical examination reveals thin, wrinkled skin, abdominal striae, and multiple purpuric skin lesions. The patient’s blood pressure is 175/95 mm Hg. Laboratory studies will likely show elevated serum levels of which of the following hormones?

(A) Aldosterone  
(B) Corticotrophin  
(C) Epinephrine  
(D) Prolactin  
(E) Thyreotropin
A 21-year-old woman experiences abruptio placentae with severe bleeding during the delivery of a term fetus. Five months later, she presents with profound lethargy, pallor, muscle weakness, failure of lactation, and amenorrhea. Which of the following pathologic findings is expected in this patient?

(A) Atrophy of the endocrine pancreas  
(B) Autoimmune destruction of the adrenal cortex  
(C) Infarction of the pituitary  
(D) Pituitary prolactinoma  
(E) Polycystic ovaries

A 65-year-old woman with a history of multinodular goiter complains of increasing nervousness, insomnia, and heart palpitations. She has lost 9 kg (20 lb) over the past 6 months. Physical examination reveals a diffusely enlarged thyroid. There is no evidence of exophthalmus. Laboratory studies show elevated serum levels of T3 and T4. Serologic tests for antithyroid antibodies are negative. Which of the following is an important complication of this patient’s endocrinopathy?

(A) Autoimmune hepatitis  
(B) Cardiac arrhythmia  
(C) Follicular carcinoma of the thyroid  
(D) Medullary carcinoma of the thyroid  
(E) Myxedema madness

A 29-year-old woman complains of nervousness and muscle weakness of 6 months in duration. She is intolerant of heat and sweats excessively. She has lost 9 kg (20 lb) pounds over the past 6 months, despite increased caloric intake. She frequently finds her heart racing and can feel it pounding in her chest. She also states that she has missed several menstrual periods over the past few months. Physical examination reveals warm and moist skin and bulging eyes (exophthalmus). Laboratory studies will likely reveal which of the following endocrine abnormalities in this patient?

(A) Anti-thyroid DNA antibodies  
(B) Anti-TSH receptor antibodies  
(C) Decreased uptake of radioactive iodine in the thyroid  
(D) Increased serum TSH  
(E) Low serum T3

A 42-year-old woman presents with amenorrhea and emotional disturbances. You note upper truncal obesity and suspect Cushing syndrome. Laboratory studies reveal elevated serum levels of corticosteroids that can be lowered by administration of dexamethasone. Which of the following is the most likely cause of hypercortisolism in this patient?

(A) Adrenal cortical adenoma  
(B) Adrenal cortical carcinoma  
(C) Adrenal cortical hyperplasia
A 40-year-old man complains of nausea, vomiting, diarrhea, and cramping abdominal pain. His temperature is 38°C (101°F), blood pressure 90/60 mm Hg, and pulse rate 90 per minute. On physical examination, the patient appears dehydrated, with sunken eyeballs, dry tongue, and poor skin turgor. Hyperpigmentation is noted in the palmar creases and the gingival margins. Laboratory results include fasting serum glucose of 62 mg/dL (normal = 70 to 115 mg/dL), BUN of 27 mg/dL (normal = 11 to 23 mg/dL), Na of 122 mEq/L (normal = 136 to 145 mEq/L), and K of 6.5 mEq/L (normal = 3.5 to 5.0 mEq/L). Which of the following is the most likely cause of this patient’s symptoms?

(A) Amyloidosis  
(B) Autoimmunity  
(C) Metastatic cancer  
(D) Sarcoidosis  
(E) Tuberculosis

A 46-year-old woman with severe asthma presents with increasing weight and back pain for 9 months. The patient is taking corticosteroids for her asthma. An X-ray of the vertebrae will likely reveal which of the following pathologic findings?

(A) Bone infarct  
(B) Dislocation  
(C) Osteomalacia  
(D) Osteomyelitis  
(E) Osteoporosis

A 14-year-old boy presents for a presummer camp physical examination. Routine urinalysis discloses 3+ glucosuria. He admits to thirst and frequent urination, accompanied by a 4-kg (9-lb) weight loss over the past few months. His parents note that he had a flu-like illness 5 months ago. His blood glucose is 220 mg/dL. Which of the following best explains the pathogenesis of hyperglycemia in this patient?

(A) Excess dietary glucose  
(B) Increased peripheral insulin uptake  
(C) Irregular insulin secretion  
(D) Islet cell destruction  
(E) Peripheral insulin resistance

A 61-year-old man presents with a 5-year history of pain in both legs during exercise. He has been treated for diabetes for 8 years. His fasting blood glucose is 280 mg/dL. Which of the following best explains the pathogenesis of leg pain in this patient?

(A) Atherosclerosis  
(B) Malignant hypertension  
(C) Microaneurysms  
(D) Peripheral neuropathy  
(E) Vasculitis
A 60-year-old man with diabetes mellitus complains of deep burning pain and sensitivity to touch over his hands and fingers. Nerve conduction studies show slow transmission of impulses and diminished muscle stretch reflexes in the ankles and knees. Sensations to vibrations and light touch are also markedly diminished. The development of polyneuropathy in this patient correlates best with which of the following conditions?

(A) Anti-insulin antibody titer  
(B) Hyperglycemia  
(C) Insulin deficiency  
(D) Intermittent hypoglycemia  
(E) Ketoacidosis

A 55-year-old obese woman (body mass index = 33 kg/m2) complains of declining visual acuity. Funduscopic examination shows peripheral retinal microaneurysms. Urinalysis reveals 3+ proteinuria and 3+ glucosuria. Serum albumin is 3 g/dL, and serum cholesterol is 350 mg/dL. These clinicopathologic findings are best explained by which of the following mechanisms of disease?

(A) Anti-insulin antibodies  
(B) Increased peripheral insulin uptake  
(C) Irregular insulin secretion  
(D) Peripheral insulin resistance  
(E) Secretion of insulin-like proteins

A 32-year-old woman with diabetes mellitus delivers a child after 38 weeks of gestation. Which of the following is the most likely abnormality that might be encountered in this child at birth?

(A) Cataracts  
(B) Hyperbilirubinemia  
(C) Hypoglycemia  
(D) Low birth weight  
(E) Mental retardation

A 56-year-old woman dies of a chronic neurodegenerative disease. Autopsy reveals spongiform encephalopathy with brain amyloidosis. This patient’s amyloidosis most likely belongs to which of the following categories?

(A) Aβ  
(B) AA  
(C) AE  
(D) AH  
(E) APrP

A 65-year-old woman dies of trauma suffered in an automobile accident. Examination of her pancreas at the time of autopsy reveals acellular, eosinophilic material within the pancreatic islets. This material is congophilic and has a fibrillar appearance by electron
microscopy. These findings suggest that prior to her death, the patient suffered from which of the following conditions?

(A) Alcoholism  
(B) Chronic pancreatitis  
(C) Pancreatic cancer  
(D) Diabetes mellitus type 1  
(E) Diabetes mellitus type 2

An 80-year-old farmer presents with a 1-cm, red, slightly raised plaque on his face. A biopsy of the lesion shows cytologic atypia and dyskeratosis limited to the basal layers of the stratum spongiosum, as well as hyperkeratosis and parakeratosis. This lesion is a precursor for which of the following dermatologic diseases?

(A) Basal cell carcinoma  
(B) Erythema multiforme  
(C) Lichen planus  
(D) Malignant melanoma  
(E) Squamous cell carcinoma

Examination of a 2-day-old neonate reveals numerous blisters on the trunk and extremities. Skin biopsy discloses separation of the basal layer of the epidermis from its basement membrane and is devoid of inflammatory cells. No antibody deposits are identified by immunofluorescence microscopy. Which of the following is the most likely diagnosis?

(A) Bullous pemphigoid  
(B) Dermatitis herpetiformis  
(C) Epidermolysis bullosa  
(D) Ichthyosis vulgaris  
(E) Pemphigus vulgaris

A 15-year-old girl complains of itchy skin lesions of 6 months in duration. Physical examination reveals numerous wheal-like lesions with small vesicles over her elbows and knees. A skin biopsy demonstrates inflammation in the tips of the dermal papillae and subepidermal vesicles. Which of the following histopathologic findings would provide the best evidence to support a diagnosis of dermatitis herpetiformis in this patient?

(A) Horn and pseudo-horn cysts  
(B) IgA deposits in dermal papillae  
(C) Koiocytotic change  
(D) Microabscesses in the stratum corneum  
(E) Spongiosis

A 14-year-old boy presents with a 6-month history of erythematous papules on his face. Physical examination reveals numerous “blackheads” over the forehead and cheeks. Which of the following bacteria is associated with the development of these lesions?

(A) Clostridium sp.
A 30-year-old man presents with flat-topped papules that have appeared gradually on the flexor surfaces of his wrists. White streaks and patches are also found on the buckle mucosa of the patient’s mouth. Histological, the lesions showed hyperkeratosis, thickening of the stratum granulose, and a bandlike infiltrate of lymphocytes and macrophages in the upper dermis, disrupting the basal layer of the epidermis. Lymphocytes were mostly of the CD4+ immunophenotype. Which of the following is the appropriate diagnosis?

(A) Dermatitis herpetiformis  
(B) Erythema multiforme  
(C) Erythema nodosum  
(D) Hypersensitivity angiitis  
(E) Lichen planus

A 40-year-old woman complains that the skin on her fingers feels stiff. The skin of her face appears tense, and radial furrows are evident around the mouth. A skin biopsy shows loss of dermal appendages and abundant collagen bundles aligned parallel to an atrophic epidermis. Which of the following clinical symptoms is commonly seen in patients with this dermatologic condition?

(A) Facial acne  
(B) Dysphagia  
(C) Fever and malaise  
(D) Polyuria and polydipsia  
(E) Urolithiasis

A 2-year-old girl was withdrawn from a day care center for excessive irritability. On physical examination, she has multiple, small superficial ulcers of the oral mucosa. The ulcerations heal spontaneously over the next 5 days. Which of the following is the most likely diagnosis?

(A) Aphthous stomatitis  
(B) Candidiasis  
(C) Gingivitis  
(D) Ludwig angina  
(E) Pyogenic granuloma

A 6-year-old boy presents with a painful sore in his mouth. Physical examination reveals a small, elevated, and focally ulcerated red-purple gingival lesion. A soft red mass measuring 1 cm in diameter is Surgically removed. Histologic examination discloses highly vascular granulation tissue, with marked acute and chronic inflammation. What is the most likely diagnosis?

(A) Acute necrotizing gingivitis
A 70-year-old woman complains of gradual hearing loss. Which of the following conditions is the most likely cause of conducting hearing loss in this patient?

(A) Acoustic trauma  
(B) Chronic otitis media  
(C) Labyrinthine toxicity  
(D) Mastoiditis  
(E) Otosclerosis

A 50-year-old woman presents with lower back pain of 3 weeks in duration. Radiologic studies reveal several discrete lytic lesions in the lumbar back and pelvis. Laboratory studies show elevated serum levels of alkaline phosphatase. Serum calcium, serum protein, and peripheral blood smears are normal. Aspiration biopsy of a pelvic lesion shows keratin positive cells. Which of the following is the most likely diagnosis?

(A) Chondrosarcoma  
(B) Metastatic carcinoma  
(C) Osteochondroma  
(D) Osteosarcoma  
(E) Plasmacytoma

A 10-year-old boy complains of increasing pain in his left hip. He began limping shortly after playing a baseball game at school. He is afebrile. An X-ray of the femoral head shows a fracture and irregular densities of the cancellous bone. You make a diagnosis of Legg-Calvé-Perthes disease. Which of the following best describes the pathologic findings in this patient?

(A) Avascular osteonecrosis  
(B) Chondroma  
(C) Fibrous dysplasia  
(D) Osteitis fibrosa cystica  
(E) Osteopetrosis

A 9-year-old boy complains of 2 weeks of pain in the hip. His temperature is 38°C (101°F). Laboratory studies show an elevated erythrocyte sedimentation rate. An X-ray reveals a mottled radiolucent defect in the upper femur, with abundant periosteal new bone formation. Fine-needle aspiration returns numerous neutrophils and cocci. *Staphylococcus aureus* is cultured from the bone lesion. A biopsy shows a fragment of necrotic bone embedded in fibrinopurulent exudate. Which of the following terms best describes the necrotic bone?

(A) Brodie abscess
A 40-year-old woman presents with pain and swelling in her left elbow that has lasted 6 months. Physical examination reveals a 0.5-cm soft tissue mass. Biopsy of the mass discloses a biphasic histologic pattern consisting of cuboidal epithelial and spindle-shaped mesenchymal cells. Which of the following is the most likely diagnosis?

(A) Liposarcoma  
(B) Malignant fibrous histiocytoma  
(C) Nodular fasciitis  
(D) Rhabdomyosarcoma  
(E) Synovial sarcoma

A 3-month-old boy presents with severe hypotonia and areflexia. His tongue and heart are enlarged. A muscle biopsy displays massive accumulation of membrane-bound glycogen and disappearance of the myofilaments and other sarcoplasmic organelles. The patient dies after 1 year. Which of the following is the most likely diagnosis?

(A) Carnitine deficiency  
(B) Duchenne muscular dystrophy  
(C) Hurler syndrome  
(D) Niemann-Pick disease  
(E) Pompe disease

A 40-year-old man presents with muscle weakness. He cannot open his hand for a handshake and cannot extend his arm after flexing it. On physical examination, he has marked atrophy of leg and arm muscles, ptosis, and a fixed facial expression. There is testicular atrophy. Laboratory studies demonstrate mild diabetes. A muscle biopsy reveals atrophy of type I fibers, hypertrophy of type II fibers, and numerous fibers with centrally located nuclei. Which of the following is the most likely diagnosis?

(A) Dermatomyositis  
(B) Duchenne muscular dystrophy  
(C) Limb-girdle muscular dystrophy  
(D) Myasthenia gravis  
(E) Myotonic dystrophy
A female neonate is noted at birth to have a gross deformity of her lower back. Examination of the subcutaneous lesion reveals disorganized neural tissue with entrapment of nerve roots. What is the appropriate diagnosis?

(A) Meningocele  
(B) Meningomyelocele  
(C) Rachischisis  
(D) Spina bifida occulta  
(E) Syringomyelia

A 20-year-old woman with mild scoliosis complains of a 3-month history of difficulty walking. Physical and neurologic examinations reveal dysarthria, lower-limb areflexia, extensor plantar reflexes, and sensory loss. Genetic studies show evidence of a trinucleotide repeat expansion syndrome. The family asks for information regarding their daughter’s prognosis. You are cognizant of the fact that the length of this child’s trinucleotide repeat is directly related to the rate of clinical progression, as well as the probability that she will develop which of the following life-threatening complications?

(A) Aplastic anemia  
(B) Astrocytoma  
(C) Cardiomyopathy  
(D) Cerebral amyloidosis  
(E) Tuberous sclerosis

A 10-month-old girl is brought to the emergency room with severe, unremitting watery diarrhea. Her blood pressure is 80 mm Hg systolic, and the pulse is 120 per minute. Which of the following is a potentially lethal complication of systemic dehydration in this patient?

(A) Diffuse axonal shearing  
(B) Intraventricular hemorrhage  
(C) Midbrain hemorrhage  
(D) Pontine hemorrhage  
(E) Venous sinus thrombosis

A 14-year-old boy complains of a 4-month history of fatigue, abdominal pain, and yellowing of his eyes and skin. Physical examination shows tremor of both hands, lack of coordination, and mild jaundice. An ophthalmic examination reveals Kayser-Fleischer rings. Degenerative changes are present in which of the following anatomic regions of the CNS in this patient?

(A) Cerebellum  
(B) Corpus striatum  
(C) Paraventricular white matter  
(D) Pons  
(E) Temporal-occipital sulcus
A 3-year-old child presents with a red and painful left eye. Ophthalmic examination reveals swelling of the eyelid and a purulent exudate. What is the proper name for this condition?

(A) Conjunctivitis  
(B) Glaucoma  
(C) Keratitis  
(D) Pinguecula  
(E) Retinitis

A 67-year-old man complains of a lesion in his left eye. Physical examination reveals a triangular fold of vascularized conjunctiva growing horizontally into the cornea in the shape of an insect wing. Which of the following terms best describes this patient’s lesion?

(A) Loiasis  
(B) Onchocerciasis  
(C) Pinguecula  
(D) Pterygium  
(E) Siderosis bulbi

A 67-year-old man with a history of ischemic heart disease presents with 4 days of blurred vision in his left eye. Which of the following findings on funduscopic examination would characterize the pathologic consequences of central retinal vein occlusion in this patient?

(A) Cherry-red macula  
(B) Cotton-wool patches  
(C) Flame-shaped hemorrhages  
(D) Macular star  
(E) Microaneurysms

Pathologic changes or clinical manifestations which occur in patients with primary hemochromatosis include all of the following EXCEPT

(A) congestive heart failure  
(B) diabetes mellitus  
(C) hepatocarcinoma  
(D) photosensitivity dermatitis  
(E) testicular atrophy

All of the following are characteristicly found in cases of ochronosis EXCEPT

(A) alkaptionuria  
(B) arthritis  
(C) deposition of melanine like pigment  
(D) photosensitivity  
(E) recessively transmitted inheritance
All of the following are features of fetal alcohol syndrome EXCPT

(A) abnormally low body weight  
(B) hirsutism  
(C) interventricular septal defect  
(D) mental deficiency  
(E) microphthalmus (small eyes)

A diabetic patient develop a carbuncle. Aspirated pus grew out *Staphylococcus aureus*. Hematogenous complications of such a staphylococcal infection include all of the following EXCEPT:

(A) endocarditis  
(B) hepatitis  
(C) lung abscesses  
(D) osteomyelitis  
(E) pyelonephritis

The exotoxin produced by *Corynebacterium diphteriae* causes pathologic changes in all of the following EXCEPT:

(A) myocardium  
(B) pharynx  
(C) peripheral nerves  
(D) skeletal muscles  
(E) trachea

Ulcers of the ileum over enlarged Peyer’s patches are characteristic finding in

(A) Salmonella gastroenteritis  
(B) Shigella dysentery  
(C) staphylococcal gastroenteritis  
(D) tuberculosis of the intestine  
(E) typhoid fever

The finding of caseating granulomas in a tissue section is specifically diagnostic of

(A) histoplasmosis  
(B) leprosy  
(C) sarcoidosis  
(D) tuberculosis  
(E) none of the above
Typical lesions in acute rheumatic fever include all of the following EXCEPT:

(A) erythema marginatum
(B) polyarthritis
(C) poststreptococcal glomerulonephritis
(D) subcutaneous nodules
(E) verrucae on mitral valve

The most characteristic lesion in acute rheumatic myocarditis is the Aschoff body. Microscopic features of the Aschoff body include all of the following EXCEPT:

(A) eosinophils
(B) fibrinoid necrosis
(C) lymphocytes
(D) multinucleated (Aschoff) cells
(E) perivascular localisation

Floppy valve syndrome most commonly involves the

(A) aortic valve
(B) mitral valve
(C) mitral and aortic valves
(D) pulmonic valve
(E) tricuspid valve

Caustive factors which have been used to explain the development of dilated (congestive) cardiomyopathy include all of the following EXCEPT:

(A) chronic alcoholism
(B) cobalt formerly used in beer
(C) inheritance as an autosomal dominant
(D) nutritional deficiency in pregnancy
(E) viral myocarditis

Pathologic findings in idiopathic hyperthrophic subaortic stenosis include all of the following EXCEPT:

(A) infiltration of eosinophils in myocardium
(B) myocardial fiber disorientation in interventricular septum
(C) thickening of anterior leaflet of mitral valve
(D) thickening of septum greater than of free wall of left ventricle
(E) small ventricular cavities

Infiltrative (restrictive) cardiomyopathy occurs in all of the following EXCEPT:

(A) amyloidosis
Characteristic features of the nephrotic syndrome include all of the following EXCEPT:

(A) edema  
(B) hypercholesterolemia  
(C) hypoalbuminemia  
(D) hypokalemia  
(E) proteinuria

In diabetes mellitus renal lesions include all of the following EXCEPT:

(A) acute pyelonephritis  
(B) glycogen deposition in tubular epithelium  
(C) necrotizing papillitis  
(D) nephrolithiasis  
(E) nodular glomerulosclerosis

Renal findings in multiple myeloma include all of the following EXCEPT:

(A) amyloid deposition in glomeruli and arterioles  
(B) Bence-Jones protein casts in tubules  
(C) metastatic calcification of tubules  
(D) necrotizing papillitis  
(E) plasma cell infiltration of the interstitium

A 2-year old child was found to have a large mass arising from the right kidney. The most frequent malignant renal neoplasm in children is

(A) adenocarcinoma  
(B) lymphoma  
(C) nephroblastoma (Wilms’ tumor)  
(D) neuroblastoma  
(E) papillary carcinoma

A 20-year-old man began to have purulent urethral discharge. Gram-negative diplococci were found within neutrophils in a smear, and gonorrhea was diagnosed. Complications of gonorrhea in males include all of the following EXCEPT:

(A) acute epididymitis  
(B) acute prostatitis  
(C) phimosis  
(D) septic arthritis
(E) urethral stricture

A 60 year-old man developed urinary frequency and retained residual urine. Digital rectal examination revealed a nodular prostate which was neither hard nor fixed. His serum prostate specific antigen (PSA) level was 1.5 units. The likeliest diagnosis is

(A) acute prostatitis
(B) adenocarcinoma of prostate
(C) hyperplasia of prostate
(D) chronic prostatitis
(E) tuberculous prostatitis

After puberty the most frequent complication of cryptorchidism is

(A) atrophy of the undescended testis
(B) development of a neoplasm in the undescended testis
(C) gynecomastia
(D) femoral hernia
(E) varicocele

Complications of gonorrhea in females include all of the following EXCEPT:

(A) acute salpingitis
(B) Bartholin gland abscess
(C) keratoconjunctivitis in newborn
(D) septic arthritis
(E) urethral caruncle

The commonest neoplasm of the female genital tract is

(A) carcinoma of the cervix (in situ or invasive)
(B) carcinoma of the endometrium
(C) dermoid cyst of the ovary
(D) leiomyoma of the uterus
(E) serous cystadenoma of the ovary

Of the following, the woman with the highest risk of developing cervical carcinoma is the one who

(A) had a mother who had cervical carcinoma
(B) ad her medarche at 11 and menopause at 51
(C) has 6 children, the first being born when she was 16
(D) is a lesbian
(E) received estrogen therapy for menopausal problems
A 30 year-old woman was in an automobile accident in which her right breast struck the steering wheel. Within a month a 3 cm firm mass developed in the breast. The likeliest diagnosis is

(A) abscess
(B) carcinoma
(C) fat necrosis
(D) fibrous mastopathy
(E) plasma cell mastitis

A 60 year-old woman had a firm, fixed 3 cm mass in her right breast. This is most likely

(A) fibroadenoma
(B) fibrocystic mastopathy
(C) carcinoma
(D) periductal mastitis
(E) sclerosing adenosis

All of the following appear to be risk factors in the development of breast carcinoma EXCEPT:

(A) early and frequent pregnancies
(B) exposure of the breast to X-radiation
(C) having a mother and/or sister with breast cancer
(D) high fat intake in the diet
(E) menopausal or postmenopausal estrogen therapy

The commonest site of ectopic pregnancy is the

(A) cervix uteri
(B) ovary
(C) pelvic peritoneum
(D) uterine tube
(E) vagina

Conditions which predispose to the development of tubal pregnancy include all of the following EXCEPT:

(A) chronic salpingitis
(B) endometriosis
(C) leiomyomata of uterus
(D) peritubal adhesions following pelvic peritonitis
(E) successful tubal ligation
A woman in her third trimester of pregnancy became comatose and went into premature labor. Toxemia of pregnancy was diagnosed. All of the following are characteristic of eclampsia **EXCEPT:**

(A) edema due to protein loss in the urine  
(B) hypertension  
(C) maternal diabetes is a predisposing factor  
(D) premature separation of the placenta  
(E) subcapsular and parenchymal hemorrhages in the liver

A full term fetus died during labor. Findings at autopsy that the death was due to fetal anoxia include all of the following **EXCEPT:**

(A) amniotic fluid debris in lungs  
(B) meconium staining of the fetal membranes  
(C) opacification of the fetal membranes  
(D) large infarct of the placenta  
(E) subepicardial and subpleural petechiae

After an uneventful first pregnancy, a 25 year-old woman gave birth to a full term infant with anemia and jaundice. Erythroblastosis fetalis was diagnosed and exchange transfusion was performed with success. All of the following are true concerning erythroblastosis fetalis **EXCEPT:**

(A) the mother is Rh-negative and the fetus is Rh-positive  
(B) the mother must be sensitized to Rh antigen  
(C) the D antigen is the most important  
(D) Rhogam (anti-D Ig) prevents sensitization when injected into the mother  
(E) incompatibility in ABO never causes erythroblastosis

The finding of increased urinary catecholamines is characteristic of

(A) Addison’s disease  
(B) Cushing’s syndrome  
(C) medullary carcinoma of thyroid  
(D) pheochromocytoma  
(E) primary hyperaldosteronism

The commonest cause of secondary hyperparathyroidism is

(A) calcitonin producing medullary thyroid carcinoma  
(B) chronic renal insufficiency  
(C) low dietary calcium intake  
(D) metastatic calcification  
(E) vitamin D deficiency

Systemic effects of hyperparathyroidism include all of the following **EXCEPT:**
Common findings in cases of diabetes mellitus include all of the following EXCEPT:

(A) amyloid deposits in glomeruli
(B) accelerated atherosclerosis
(C) gangrene of the feet
(D) hypercholesterolemia
(E) increased susceptibility to infections

A 20 year-old college student suddenly collapsed. There was a rash. Another student had been hospitalized with meningococcal meningitis. The first student had Waterhouse-Friderichsen syndrome. Its features include all of the following EXCEPT:

(A) bilateral adrenal hemorrhage
(B) infarction of pituitary
(C) purpura of skin
(D) septicemia
(E) shock

A 40 year-old man suffered loss of deep pain, vibration, and position sense in his legs. Degeneration of the posterior columns in the spinal cord and posterior nerve roots occurs in

(A) amyotrophic lateral sclerosis
(B) cerebral infarction involving the internal capsule
(C) multiple sclerosis
(D) pernicious anemia
(E) tabes dorsalis

A 70 year-old woman gradually lost her memory and became unable to care for herself. She was diagnosed as having Alzheimer’s disease. Cerebral lesions in this disorder include all of the following EXCEPT:

(A) amyloid deposition in plaques and small blood vessel walls
(B) areas of demyelinization in gray and white matter
(C) granulovacuolar degeneration in neurons
(D) neuritic plaques in gray matter
(E) neurofibrillary tangles in neurons
A 35 year-old woman with mitral stenosis and atrial fibrillation suddenly developed left sided paralysis. It was diagnosed as being due to cerebral embolism. Such an embolus most commonly impacts in a branch of the

(A) anterior cerebral artery  
(B) basilar artery  
(C) lenticulostriate artery  
(D) middle cerebral artery  
(E) posterior cerebral artery

An 80 year-old man suffered a cerebrovascular accident with left hemiplegia. The cause was a cerebral hemorrhage. Such bleeding frequently originates in the

(A) basal ganglia and internal capsule  
(B) frontal lobe  
(C) midbrain  
(D) occipital lobe  
(E) temporal lobe

The causes of cerebrovascular accidents (strokes) include all of the following EXCEPT:

(A) embolism in a cerebral artery  
(B) hemorrhage into a glioblastoma multiforme  
(C) rupture of an atherosclerotic intracerebral artery  
(D) spontaneous subarachnoidal hemorrhage  
(E) thrombosis of an atherosclerotic cerebral artery

A 12 year-old child developed headaches, vomiting, and a staggering gait. A cerebellar neoplasm was diagnosed. The neoplasm which characteristically occurs in the cerebellum in children is

(A) ependymoma  
(B) glioblastoma multiforme  
(C) medulloblastoma  
(D) neuroblastoma  
(E) oligodendroglioma

A malignant neural neoplasm arising in the adrenal medulla in a child is the

(A) astrocytoma  
(B) glioblastoma multiforme  
(C) medulloblastoma  
(D) neuroblastoma  
(E) pheochromocytoma

A fracture in which there are three or more bone fragments is
The most common malignant neoplasm of bone is

(A) chondrosarcoma  
(B) giant cell tumor  
(C) metastatic carcinoma  
(D) multiple myeloma  
(E) osteogenic sarcoma

A 50 year-old man suffered from classic primary gout, especially after voluminous eating and drinking. All of the following statements about this disorder are true **EXCEPT:**

(A) it almost always occurs in men  
(B) it is inherited as an X-linked disorder  
(C) the metatarsophalangeal joint of the great toe is classically involved  
(D) tophi made up of urate crystals and foreign body giant cells are common  
(E) tophi often occur in the ears

All of the following are correct statements concerning malignant melanoma of the skin **EXCEPT:**

(A) ultraviolet sunlight is an important causative factor  
(B) light-skinned individuals have a higher incidence than dark-skinned ones  
(C) it arises from melanocytes in the basal layer  
(D) it spreads via lymphatics early, then hematogenously  
(E) it occurs in increased incidence in patients with AIDS

All of the following are characteristic of basal cell carcinoma **EXCEPT:**

(A) deep invasion  
(B) lymph node metastases  
(C) multicentricity  
(D) occurrence on skin of face  
(E) ulceration